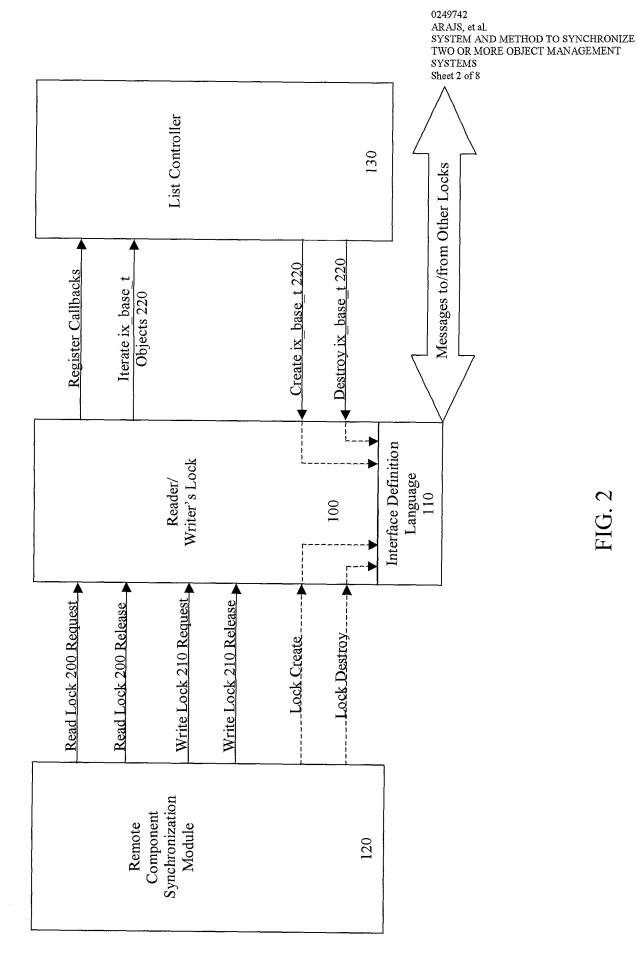0249742
ARAJS, et al.
SYSTEM AND METHOD TO SYNCHRONIZE
TWO OR MORE OBJECT MANAGEMENT
SYSTEMS
Sheet 1 of 8

Interface Definition Language 110

Object Management System Component 140

Remote Component Synchronization Module 120

Reader / Writer's Lock

100

Interface Definition Language 110

List Controller

130

Communications List

150

Communications Controller

160

FIG.1

FIG. 2
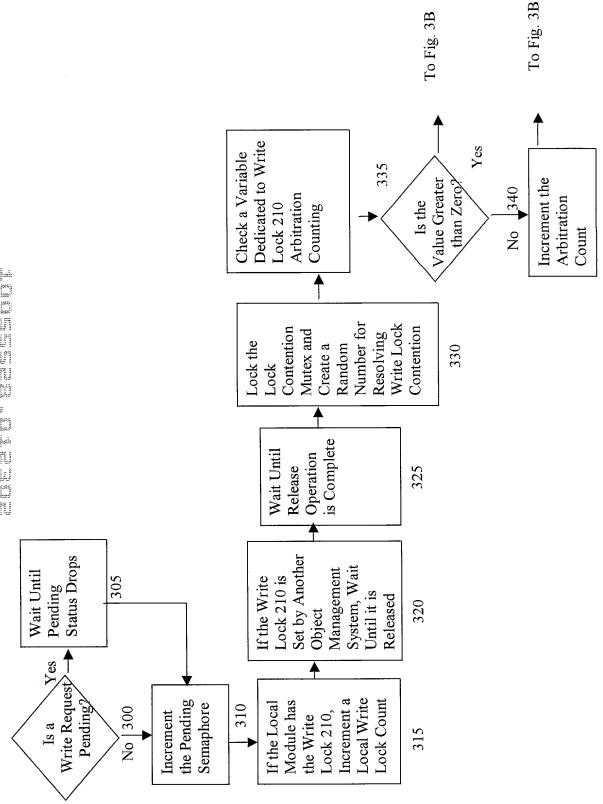
0249742
ARAJS, et al.
SYSTEM AND METHOD TO SYNCHRONIZE
TWO OR MORE OBJECT MANAGEMENT
SYSTEMS
Sheet 3 of 8

FIG. 3A

0249742
ARAJS, et al.
SYSTEM AND METHOD TO SYNCHRONIZE
TWO OR MORE OBJECT MANAGEMENT
SYSTEMS
Sheet 4 of 8

Once All Remote Modules Have Provided the Write Lock 210, Return Without Setting the Write Lock 210 in the Lock Component

385

No

Did the Request Fail?

370

Yes

Decrease the Local Write Lock

375

Repeat from Step 320

380

Make a Write Lock 210 Request to the Remote Reader and Writer's Lock

365

Release the Lock Contention Mutex

360

Release the Lock Contention Mutex and Return to Step 320

345

Set the Lock's Arbitration Identification to the Local Object Management System and Set its Priority by Generating a Bound Random Number

355

From Fig. 3A

From Fig. 3A

FIG. 3B

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ARAJS, et al.
SYSTEM AND METHOD TO SYNCHRONIZE
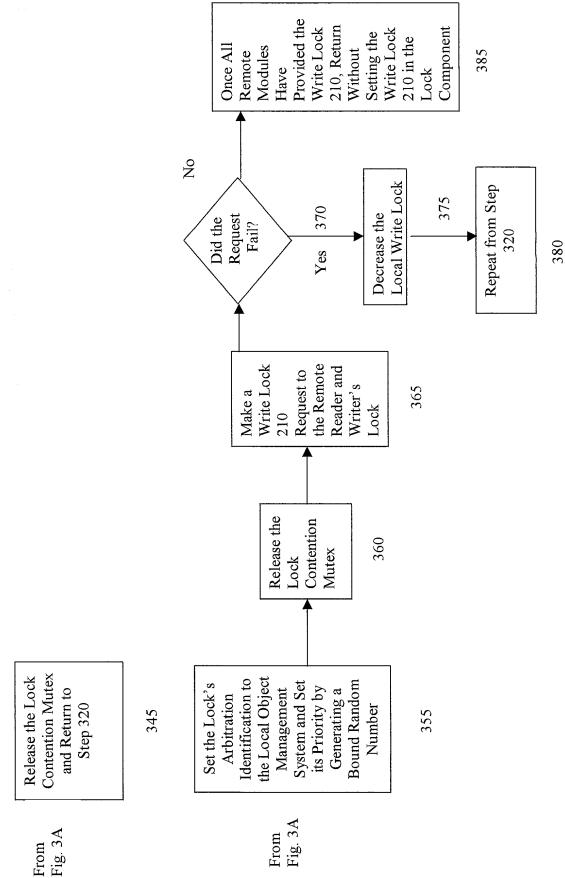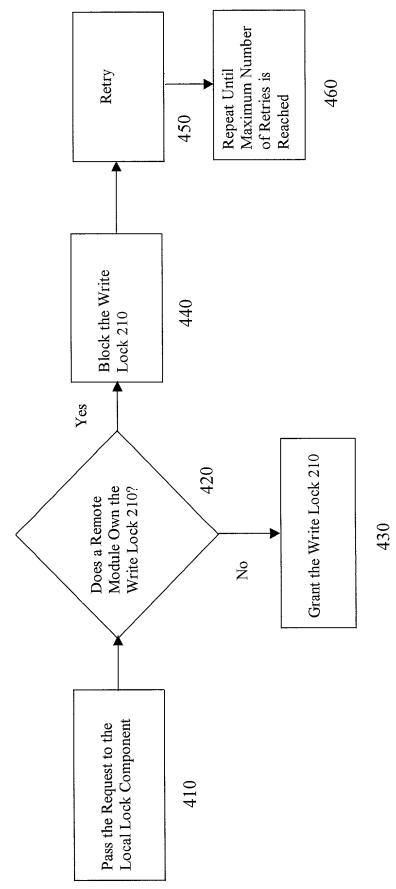TWO OR MORE OBJECT MANAGEMENT
SYSTEMS
Sheet 5 of 8

FIG. 4

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ARAJS, et al.
SYSTEM AND METHOD TO SYNCHRONIZE
TWO OR MORE OBJECT MANAGEMENT
SYSTEMS
Sheet 6 of 8

Release Lock
Contention Mutex
and Return
Information About
the Arbitration
Winner to the
Requesting Object
Management System

560

Yes

Did the Remote
Object
Management
System Lose
Arbitration?

550

No

Pass the
Request to the
Lock
Component

570

Release Lock
Contention Mutex

580

Resolve
Contention
for the Write
Lock 210

540

Yes

Is the
Arbitration
Count Greater
than Zero?

520

No

Increment the
Arbitration
Count

530

Lock the Lock
Contention
Mutex and Check
Arbitration Count

510

FIG. 5

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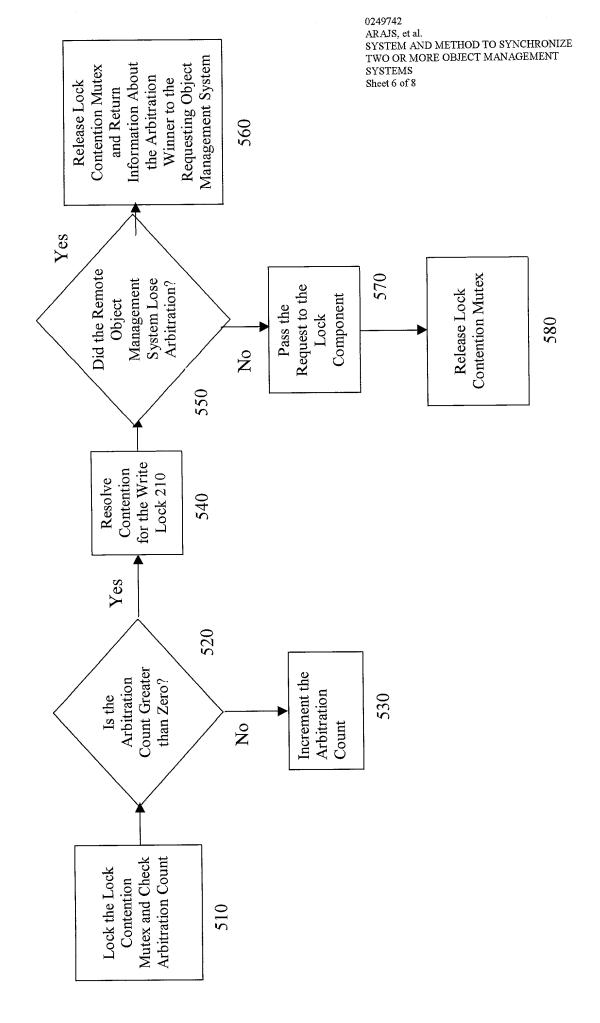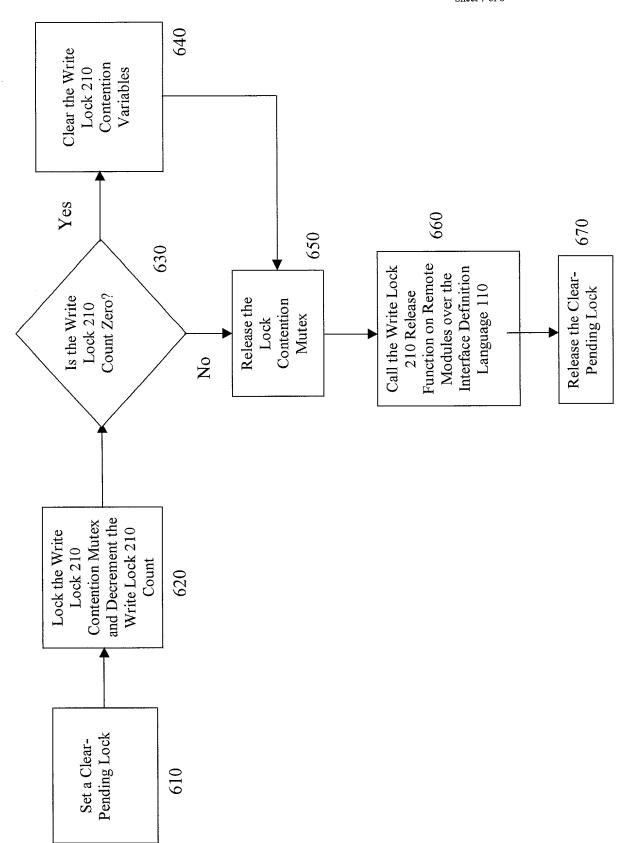TWO OR MORE OBJECT MANAGEMENT
SYSTEMS
Sheet 7 of 8

FIG. 6

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ARAJS, et al.
SYSTEM AND METHOD TO SYNCHRONIZE
TWO OR MORE OBJECT MANAGEMENT
SYSTEMS
Sheet 8 of 8

Set the Clear-
Pending Lock

710

Lock the Write
Lock 210
Contention Mutex
and Clear the Write
Lock 210
Contention
Variables

720

Clear the Writer's
Lock 210 from the
Local Lock
Component

730

Release the Lock
Contention Mutex

740

Clear the Clear-
Pending Lock

750

FIG. 7